2026 11th INTERNATIONAL CONFERENCE ON ENERGY EFFICIENCY AND AGRICULTURAL ENGINEERING (EE&AE 2026)

CONFERENCE PROGRAM

EE&AE

3 – 6 November, 2026

Starozagorski bani, Bulgaria

2026 11th INTERNATIONAL CONFERENCE ON
ENERGY EFFICIENCY AND AGRICULTURAL ENGINEERING (EE&AE 2026)
3 – 6 November 2026
Starozagorski Bani, Bulgaria

Organized by:

Association for Engineering and Research in Agriculture (AERA)

Laboratory Digital Energy Systems 4.0

Technical co-sponsors:

IEEE Bulgaria Section

IEEE Bulgaria Section CAS/SSC Joint Chapter

Sponsors:

University of Ruse "A. Kanchev" **Ate Plast LTD.** **Enery Bulgaria**

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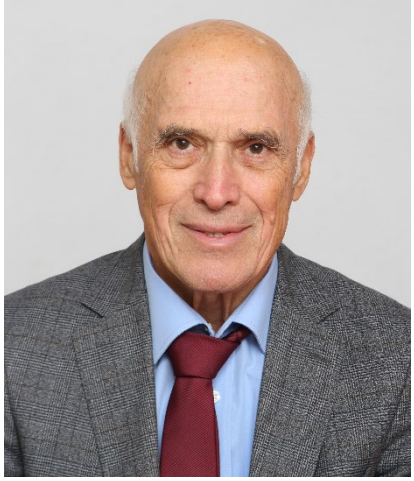
WELCOME ADDRESS

Dear colleagues, distinguished guests, ladies and gentlemen,



We are gathered once again for the latest edition of the traditional international scientific conference, "Energy Efficiency and Agricultural Engineering".

The diverse range of participants - hailing from various higher education institutions within the country, as well as universities and research organizations across Europe, Asia, Africa, and the Americas - promises an engaging scientific discussion on critical issues of great societal concern, such as the energy transition, the provision of affordable and accessible energy and food. The event will feature not only many of our regular participants but also newcomers from Algeria, India, Indonesia, and the Philippines. For a few days, we will step away from lecture halls and teaching laboratories, yet we remain mindful of the students and doctoral candidates who will soon face the challenges of modern energy and agriculture. Many of them are presenting their first scientific publications at this conference. I am therefore confident that the 11th edition of the International Conference on Energy Efficiency & Agricultural Engineering will further solidify its standing as a prestigious forum - a venue where concrete solutions for the energy and agricultural sectors are discussed and proposed amidst a landscape of rapid technological transformation. This event is a wonderful opportunity to expand partnerships, share professional experience, and thereby support the transition toward a sustainable energy future.

The sense of solidarity shown by the academic community - both here and abroad - towards this scientific event is truly impressive. This, combined with the financial, moral, and technical support from the business sector, the academic leadership of the University of Ruse "Angel Kanchev", and the Bulgarian Section of the Institute of Electrical and Electronics Engineers (IEEE) - the world's largest professional organization - has made it possible for us to meet once again. Please accept our sincere thanks and appreciation!

Dear friends, I am convinced that the charm of this heavenly corner of Bulgaria, combined with the hospitality and dedication of my young team members, will make your participation in the conference truly unforgettable!

I wish you all good health, a wonderful experience, and a successful conference!

Prof. Dr. Nicolay Mihailov, DHC

Chair of the EE&AE 2026 Conference

EE&AE 2026 - PROGRAM AT A GLANCE

All times are EET (Eastern European Time), i.e. GMT+2 (Bulgarian Time).
All events are in SPA Hotel Calista.

Tuesday, 3 November 2026

14:00 – 17:15	Registration (In front of Calista Grand Hall)		
15:00 – 15:15	Opening Ceremony (Calista Grand Hall)		
15:15 – 16:30	Plenary Oral Session 1 (Calista Grand Hall)		
16:30 – 17:00	Coffee Break (In front of Calista Grand Hall)		
17:00 – 18:15	In-Person Poster Session 1 (In front of Calista Grand Hall)	Virtual Oral Session 1 (online)	Virtual Oral Session 2 (online)
15:00 – 18:15	Virtual Poster Session		
20:00	Dinner (Calista Restaurant)		

Wednesday, 4 November 2026

09:00 – 16:30	Registration (In front of Calista Grand Hall)	
09:00 – 17:30	Virtual Poster Session	
09:00 – 10:30	In-Person Oral Session 1 (Calista Grand Hall)	
10:30 – 11:00	Coffee Break (In front of Calista Grand Hall)	
11:00– 12:15	In-Person Oral Session 2 (Calista Grand Hall)	
12:30 – 14:00	Lunch (Calista Restaurant)	
14:00 – 15:15	Plenary Oral Session 2 (Calista Grand Hall)	
15:15 – 15:45	Coffee Break (In front of Calista Grand Hall)	
15:45 – 17:00	In-Person Poster Session 2 (In front of Calista Grand Hall)	Virtual Oral Session 3 (online)
17:00 – 18:15	In-Person Poster Session 3 (In front of Calista Grand Hall)	Virtual Oral Session 4 (online)
20:00	Dinner (Calista Restaurant)	

Thursday, 5 November 2026

09:00 – 17:15	Registration (In front of Calista Grand Hall)

09:00 – 18:00	Virtual Poster Session	
09:00 – 10:15	In-Person Oral Session 3 (Calista Grand Hall)	
10:15 – 10:30	Coffee Break (In front of Calista Grand Hall)	
10:30 – 11:15	Industrial Session (Calista Grand Hall)	
11:15 – 12:30	In-Person Oral Session 4 (Calista Grand Hall)	In-Person Oral Session 5 (Calista Meeting Room)
12:30 – 14:00	Lunch (Calista Restaurant)	
14:00 – 14:45	Project dissemination (Calista Grand Hall)	
14:45 – 15:15	Coffee Break (In front of Calista Grand Hall)	
15:15 – 16:30	In-Person Poster Session 4 (In front of Calista Grand Hall)	Virtual Oral Session 5 (online)
16:30 – 17:45	In-Person Poster Session 5 (In front of Calista Grand Hall)	Virtual Oral Session 6 (online)
20:00	Gala Dinner (Calista Grand Hall)	

Friday, 6 November 2026

09:00 – 10:15	Virtual Oral Session 7 (online)
09:00 – 10:15	Virtual Poster Session
10:15	End of Conference

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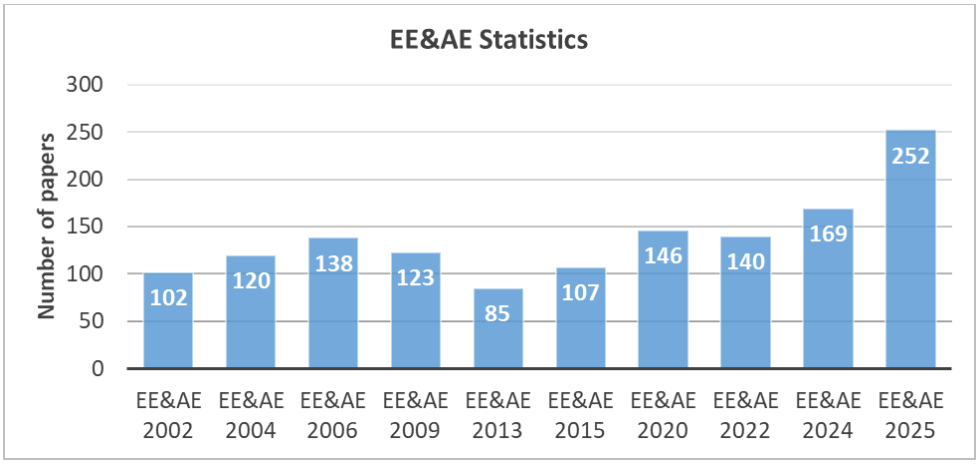
EE&AE HISTORY

The EE&AE conference was initially organized by a group of researchers from the University of Ruse "Angel Kanchev", aiming to challenge several fundamental world problems related to the world hunger and energy poverty. The first International Conference on Energy Efficiency and Agricultural Engineering was held back in the year 2002, with the support of the International Commission of Agricultural and Biosystems Engineering (CIGR). It has attracted the attention of more than 102 researchers, academicians, engineers, and students from 23 countries in Europe, Asia, and Africa. Since then, a total of ten conferences were held, which maintained the initial interest in the topics.



Traditionally, the EE&AE conference is supported by the University of Ruse "Angel Kanchev", as well as by several national and international companies, and since 2020, EE&AE has been technically co-sponsored by IEEE. Their assistance provides the necessary technical infrastructure and organization of cultural activities creating beneficial conditions for the efficient organization and pleasant atmosphere of the events.

Since 2022, in the conference were introduced the so-called Industrial Sessions, allowing leading companies in the energy and agricultural sectors to demonstrate their state-of-the-art products and technologies to the academic community, which led to deepened cooperation between Business and Science.

KEYNOTE SPEAKERS

Name: Fadila Barkat

Job position: Assistant Professor – Lecturer (Maître de conférences MCB)

Affiliation: Materials, Energy Systems Technology and Environment Laboratory, Department of Automation and Electromechanics, University of Ghardaia, Ghardaia, Algeria

E-mail: barkat.fadila@univ-ghardaia.edu.dz

Presentation: Thermodynamic and Energetic Analyses of PVT versus PV Technologies under Semi-Arid Climatic Conditions: A Case Study of Ghardaia, Algeria

Dr. Fadila Barkat is a university lecturer and researcher holding the rank of Maître de conférences classe B (MCB). Her research focuses on advancing reliable and climate-resilient energy systems, with published contributions to photovoltaic grid integration, anti-islanding protection, and solar-powered electric vehicle charging. She is particularly interested in how extreme heat and challenging climatic conditions affect solar energy performance, alongside broader interests in thermal energy and hybrid energy systems. Bringing together system protection, climate-sensitive performance, and sustainable mobility, her research aims to support clean-energy solutions adapted to demanding real-world environments.

Name: Angel Marinov

Job position: Associate Professor, Vice-Dean of Research

Affiliation: Technical University of Varna, Faculty of Computer Sciences and Automation, Department of Electronics and Microelectronics, Varna, Bulgaria

E-mail: a.marinov@tu-varna.bg

Presentation: Linking Academic Research with Entrepreneurial Success

Angel Marinov is an Associate Professor and Vice-Dean of the Faculty of Computer Sciences and Automation at the Technical University of Varna, Bulgaria. He holds a PhD in Power Electronics. His research interests span power electronics, energy-efficient embedded and IoT systems, artificial intelligence, and the application of digital technologies in higher education. He participates in multidisciplinary European research and education initiatives, including Erasmus+ and Horizon Europe projects. His recent work explores the design, institutional deployment, and evaluation of governed generative AI systems, with particular emphasis on practical applications in entrepreneurship education.

Name: Rareș-Andrei Chihaia

Job position: Senior Researcher

Affiliation: National Institute for R&D in Electrical Engineering ICPE-CA, Bucharest, Romania

E-mail: rares.chihaia@icpe-ca.ro

Presentation: Design and Preliminary Testing of a Smart Behavioural Barrier System for Fish Protection

Rareș-Andrei Chihaia is a Second-degree Scientific Researcher focused on the use of renewable energy sources and the research, development, and design of innovative products for renewable energy conversion. He holds bachelor's and master's degrees in Power Engineering from Politehnica University and a PhD in Civil Engineering from the Technical University of Civil Engineering Bucharest, awarded in 2016. He is experienced in small-scale experiments on dedicated test stands involving water flow, electrical generators, and PV panels.

His professional experience includes seven research projects as project leader and participation as a team member or key person in more than 30 research projects, including four international projects, over 15 years of activity. He has authored 65 scientific papers, 27 of which are indexed in Web of Science, and holds seven patents. He has received 15 distinctions, medals, and prizes. He is a reviewer for Sustainability, Energies, and Applied Sciences, published by MDPI in Basel, Switzerland.

Web of Science ResearcherID: D-3184-2018. ORCID: 0000-0002-5084-3212.

Name: Sinda M'Saada

Job position: Researcher

Affiliation: GATE Institute – Big Data for Smart Society, Sofia, Bulgaria

E-mail: sinda.msaada@gate-ai.eu

Presentation: A Bulgarian Residential Open Data Repository for Urban Building Energy Modelling

Sinda M'Saada is an energy engineer and researcher in the Future Cities team at the GATE Institute in Sofia, where she works on urban building energy modelling, Positive Energy Districts, and machine learning applied to energy. She holds a BSc in Environmental Sciences and Engineering and an MSc in Energy Science and Technology from the École Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Previously, she worked as a researcher in the Power-to-X team at the Eastern Switzerland University of Applied Sciences, contributing to Swiss national projects on natural gas defossilization, long-term storage, and waste-to-energy systems. Her research interests include building renovation, energy flexibility, and techno-economic analysis of energy systems.

PROGRAM IN DETAILS

Tuesday, 3 November 2026

14:00 – 17:15 **Registration (In front of Calista Grand Hall)**

Tuesday, 3 November 2026

15:00 – 15:15 **Opening Ceremony (Calista Grand Hall)**

Prof. Dr. Nicolay Mihailov, University of Ruse Angel Kanchev, Conference Chair

Prof. Dr. Valentina Markova, Technical University of Varna, IEEE Bulgaria Section

Tuesday, 3 November 2026

15:15 – 16:30 **Plenary Oral Session 1 (Calista Grand Hall)**

Session chair: Boris EVSTATIEV, University of Ruse "Angel Kanchev"

Session co-chair: Ludmil STOYANOV, Technical University of Sofia

PL1.1 Thermodynamic and Energetic Analyses of PVT versus PV Technologies under Semi-Arid Climatic Conditions: A Case Study of Ghardaia, Algeria

Fadila Barkat (University of Ghardaia); Djemoui Lalmi (URAER Univ. Oum El Bouaghi; University of Ghardaia); Hikmat S. Hilal (College of Sciences An-Najah National University); Josep M. Guerrero (Univ. of Valladolid; Zhejiang University); Roxana Grigore (Vasile Alecsandri University of Bacau); Ioan Viorel Banu (Vasile Alecsandri University of Bacau)

PL1.2 Linking Academic Research with Entrepreneurial Success

Angel Marinov (Technical University of Varna)

Tuesday, 3 November 2026

16:30 – 17:00 **Coffee Break** (In front of Calista Grand Hall)

Tuesday, 3 November 2026

17:00 – 18:15 **In-Person Poster Session 1** (In front of Calista Grand Hall)

Session chair: Tsvetelina GEORGIEVA, University of Ruse "Angel Kanchev"

Session co-chair: Seher KADIROVA, University of Ruse "Angel Kanchev"

P1.1 Time Series Analysis for Forecasting based on Exponential Smoothing Algorithm for Agriculture in Stara Zagora

Boriana Vatchova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Yordanka Boneva (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

P1.2 Comprehensive Study of Operational Reliability and Diagnostics of System Failures of Photovoltaic Systems

Stoyan Bozhkov (Technical University of Sofia); Ivelina Metodieva (Technical University of Sofia); Ivelina Takeva-Beberova (Technical University of Sofia); Stanimir Yalanski (Technical University of Sofia)

P1.3 Dynamic and Probabilistic Energy-Based Assessment of Multilayer Protective Systems under Impulsive Fragment Loading

Konstantin Raykov (Technical University of Sofia, EPF-Sliven)

P1.4 Investigation of the influence of external constant magnetic fields on the metrological characteristics of a current transformer

Misho Matsankov (Technical University of Sofia); Mario Dechev (Technical University of Sofia); Atanas Radulov (Technical University of Sofia)

P1.5 Investigation of the attenuation of transmitted light between orange ABS and PETG materials intended for use in additive manufacturing

Kliment Georgiev (Technical University of Sofia); Misho Matsankov (Technical University of Sofia); Mario Dechev (Technical University of Sofia); Atanas Radulov (Technical University of Sofia); Teodor Demirev (Technical University of Sofia)

P1.6 Interdependence, Balance and Distribution of Tangential Tensions in Flow Through Smooth Pipes

Roumen Gadjev (ISSAPP "Nikola Poushkarov")

P1.7 Prediction and Assessment of Hydrodynamic Condition of the River Beds

Roumen Gadjev (ISSAPP "Nikola Poushkarov")

P1.8 Studies and Research on Flow Velocity and Condition of Mobile River Beds at High Waters and Floods

Roumen Gadjev (ISSAP "Nikola Poushkarov")

P1.9 System-Oriented Assessment of Inclusive Competence in Engineering Teacher Education

Marlena Daneva (Technical University of Sofia)

P1.10 A Model for Inclusive STEM Education with Pedagogically Managed AI Support

Marlena Daneva (Technical University of Sofia)

P1.11 A psychological and pedagogical model of the motivational trajectory among engineering students in a four-year longitudinal study

Monika Simeonova-Ingilizova (Faculty of Engineering and Pedagogy – Sliven Technical University of Sofia)

P1.12 The Resource-Oriented Approach in the Training of Engineering Educators

Monika Simeonova-Ingilizova (Faculty of Engineering and Pedagogy – Sliven Technical University of Sofia)

P1.13 The F2J Model for Developing Psychological Resilience in Students with Engineering-Pedagogical Training

Monika Simeonova-Ingilizova (Faculty of Engineering and Pedagogy – Sliven Technical University of Sofia)

P1.14 Effect of $CuSO_4$ Modification on the Structure and Performance of Polyacrylonitrile Ultrafiltration Membranes

Milena Miteva (Burgas State University "Prof. Dr. Assen Zlatarov"); Violeta Raykova (Technical University of Sofia - Faculty and College of Sliven)

P1.15 Impact of Reflective Surfaces and their Tilt on Bifacial PV Rear-Side Energy Contribution

Ludmil Stoyanov (Technical University of Sofia); Ivan Bachev (Technical University of Sofia)

P1.16 Performance Comparison of Rooftop Photovoltaic Systems Installed on Different Roof Types and Azimuths: A Case Study for Bulgaria

Ludmil Stoyanov (Technical University of Sofia); Daniel Ivanov (Technical University of Sofia); Vladimir Lazarov (Technical University of Sofia)

P1.17 A Methodology for Experimental Investigation of Small PV Parks with a Normalized Load Profile

Boris Evstatiev (University of Ruse "Angel Kanchev"); Ventsislav Keseev (University of Ruse "Angel Kanchev"); Nikolay Valov (University of Ruse "Angel Kanchev"); Katerina Gabrovska-Evstatieva (University of Ruse "Angel Kanchev"); Nicolay Mihailov (University of Ruse "Angel Kanchev")

P1.18 Experimental Evaluation of DC Circuit Breaker Performance in Microgrids

Nicolay Mihailov (University of Ruse "Angel Kanchev"); Nikolay Valov (University of Ruse "Angel Kanchev"); Boris Evstatiev (University of Ruse "Angel Kanchev")

Tuesday, 3 November 2026

17:00 – 18:15 **Virtual Oral Session 1** (online)

Session chair: Ventsislav KESEEV, University of Ruse “Angel Kanchev”

VO1.1 A Probabilistic Reliability Forecasting Framework for Electromechanical Equipment under Limited Failure Data: Application to a Marine Oil Purifier

Doru Cosofret (Naval Academy Mircea cel Batran); Octavian Narcis Volintiru (Naval Academy Mircea cel Batran); Marius Cucu (Naval Academy Mircea cel Batran); Adrian Popa (Naval Academy Mircea cel Batran)

VO1.2 Cavitation-Induced Torque Rise and Energy Efficiency Loss of a High-Speed Marine Propeller

Adrian Popa (Romanian Naval Academy ”Mircea cel Bătrân”); Octavian-Narcis Volintiru (Romanian Naval Academy ”Mircea cel Bătrân”)*; Alecu Toma (Romanian Naval Academy ”Mircea cel Bătrân”); Catalin Popa (Romanian Naval Academy ”Mircea cel Bătrân”); Marius Cucu (Romanian Naval Academy ”Mircea cel Bătrân”)

VO1.3 Performance Evaluation and Multi-Criteria Optimization of NIST-Standardized Post-Quantum Cryptographic Algorithms Using the AKPOU Framework

Mekan Hojamammedow (State Energy Institute of Turkmenistan); Jumamuhammet Abdyev (State Energy Institute of Turkmenistan); Maral Charyeva (State Energy Institute of Turkmenistan); Oguljan Amanowa (State Energy Institute of Turkmenistan); Arslan Agayew (State Energy Institute of Turkmenistan); Gulshat Aganazarowna (State Energy Institute of Turkmenistan)

VO1.4 AI-Driven Adaptive Curriculum Design Based on Students' Knowledge Levels in Higher Education

Jumamuhammet Abdyev (State Energy Institute of Turkmenistan); Mekan Hojamammedow (State Energy Institute of Turkmenistan); Maysa Charyeva (State Energy Institute of Turkmenistan)

VO1.5 An Adaptive AI-Based Multi-Factor Risk Assessment Model for Secure Banking Authentication and Threat Detection

Maysa Charyeva (State Energy Institute of Turkmenistan); Jumamuhammet Abdyev (State Energy Institute of Turkmenistan); Mekan Hojamammedow (State Energy Institute of Turkmenistan)

VO1.6 Research on the Performance of a Photovoltaic System with Tilted and Vertical Bifacial Panels

Ventsislav Keseev (University of Ruse "Angel Kanchev")

Tuesday, 3 November 2026

17:00 – 18:15 **Virtual Oral Session 2** (online)

Session chair: Daniel PAVLOV, University of Ruse "Angel Kanchev"

VO2.1 Adaptation of the Theory of Hybrid Spaces to the Conditions of Developing Markets in Central Asia

Mikhail Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Maria Chernyakova (Siberian Institute of Management of the Russian Academy of National Economy and Public Administration); Rajab Rajabov (Tajik State University of Commerce Dushanbe, Tajikistan); Munavar Saidova (Tajik State University of Commerce Dushanbe, Tajikistan); Saidmukhtori Mukhtorzoda (Tajik State University of Commerce Dushanbe, Tajikistan); Gulanor Fozilova (Tajik State University of Commerce Dushanbe, Tajikistan)

VO2.2 Cooperative Data Economy as a New Paradigm for Sustainable Development of Rural Territories in Siberia

Mikhail Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Maria Chernyakova (Siberian Institute of Management of the Russian Academy of National Economy and Public Administration); Izol′da Habarova (Siberian University of Consumer Cooperation); Kamal Akberov (Novosibirsk State University of Economics and Management); Mushfig Agababaev (Ural State University of Economics); Ramil Ragimov (Novosibirsk State University of Economics and Management)

VO2.3 Digital Economy as a Driver of Paradigm Shift in Assessing Agricultural Sector Efficiency

Mikhail Chernyakov (Siberian University of Consumer Cooperation, Kazan Cooperative Institute (branch) of the Russian University of Cooperation); Maria Chernyakova (Siberian Institute of Management of the Russian Academy of National Economy and Public Administration); Vyacheslav Andrievsky (Siberian University of Consumer Cooperation); Tatyana Zhelezova (Siberian University of Consumer Cooperation); Victor Chechulin (Siberian University of Consumer Cooperation); Oksana Morozova (Siberian University of Consumer Cooperation)

VO2.4 Toward Unified Multi-State Learner Modeling: A Survey and Framework for Adaptive Learning Systems

Hind Ben Rahmoun (Abdelmalek Essaadi University, Faculty of Sciences, Tetouan); Aneliya Ivanova (University of Ruse "Angel Kanchev"); Noura Aknin (Abdelmalek Essaadi University, Faculty of Sciences, Tetouan); Souhaib Aammou (Abdelmalek Essaadi University, Faculty of Sciences, Tetouan, Morocco)

VO2.5 A Model of Practical Exercises Integrating Arduino-Based Sensor Modules and Geographic Information Systems for Spatial Data Learning

Elitsa Ibryamova (University of Ruse "Angel Kanchev"); Pavel Zlatarov (University of Ruse "Angel Kanchev")

VO2.6 Support to Agricultural Producers – Myth or Reality

Daniel Pavlov (University of Ruse "Angel Kanchev"); Violeta Yankolova-Ali (University of Ruse "Angel Kanchev"); Anisa Kume (University of Tirana); Anna Wójcik-Karpacz (Jan Kochanowski University of Kielce); Deniza Alieva (Management Development Institute of Singapore in Tashkent); Emil Knezović (International University of Sarajevo); Julia Murzina (Tyumen State University); Matei Tamasila (Politehnica University of Timisoara); Silvia Puiu (University of Craiova)

From Tuesday, 3 November 2026 to Friday, 6 November 2026

09:00 – 17:30 **Virtual Poster Session** (Available at the conference website)

Session chair: Nikolay VALOV, University of Ruse "Angel Kanchev"

VP1 Mechanisms for managing production risk in agricultural holdings

Kristina Pavlova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

VP2 Thermodynamic and kinetic parameters of the cube residue obtained in the cohobation process

Ana Semerdzhieva (University of Food Technologies - Plovdiv)

VP3 Experimental study of lightweight concrete with lightweight aggregates for energy-efficient building applications

Penka Zlateva (Technical university of Varna); Rositsa Petkova-Slipets (Varna Free University “Ch. Hrabar”); Nevena Mileva (Technical University of Varna); Krum Yanazov (Technical University of Varna)

VP4 Preparation and Investigation of Some Possible Applications of Ecological Lubricants Based on Transesterified Vegetable Oils With Polyvalent Alcohols-Part Two

Stanislav Bayryamov (University of Ruse "Angel Kanchev")

VP5 Preparation and Investigation of Some Possible Applications of Ecological Lubricants Based on Transesterified Vegetable Oils With Polyvalent Alcohols-Part Three

Stanislav Bayryamov (University of Ruse "Angel Kanchev")

VP6 Combined method for the synthesis of metal stearates by using anionic and non-ionic surfactants

Stanislav Bayryamov (University of Ruse "Angel Kanchev")

VP7 Intelligent Transport Systems for Urban Traffic Management

Kristina Pavlova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

VP8 Calculation of Steam Consumption for Essential Oil Extraction and Heat of Evaporation

Ana Semerdzhieva (University of Food Technologies - Plovdiv)

VP9 Remote Ultrasonic Measurement of Biomass Quantity in Winter Wheat

Asparuh Atanasov (Technical University of Varna, Bulgaria)

VP10 Cutting Forces of Chernozem Soil During Cultivation

Asparuh Atanasov (Technical University of Varna, Bulgaria)

VP11 Deformation measurement techniques for soil-working elements in tillage operations

Asparuh Atanasov (Technical University of Varna, Bulgaria)

VP12 Comparison of Analytical and Experimental Results for Thermodynamic Parameters of Secondary Essential Oil from Fennel Fruits

Ana Semerdzhieva (University of Food Technologies - Plovdiv)

VP13 Long-term planning accounting for the electric power system flexibility

Petya Tsvetkova (Technical University of Sofia); Hristo Ilchev (Technical University of Sofia); Mladen Mladenov (Technical University of Sofia)

VP14 Methodology from mode control in active-adaptive power grids with decentralized energy sources

Mladen Mladenov (Technical University of Sofia); Petya Tsvetkova (Technical University of Sofia)

VP15 The Relationship Between Climate Variability and Food Losses in Bulgaria

Stela Todorova (University of Agriculture); Kaloyan Haralampiev (Sofia University "St. Kliment Ohridski")

VP16 Climate Variability and Food Losses in Southeast Europe: Evidence from Bulgaria, Croatia, Greece, Hungary and Romania

Stela Todorova (University of Agriculture)

VP17 Influence of the Pre Sowing Electromagnetic Treatment of Cotton Seeds of the Helius Variety on Their Growth, Development and Productivity

Kiril Sirakov (University of Ruse "Angel Kanchev"); Minka Koleva (Field Crops Institute, Agricultural Academy)

VP18 Investigation of the Effects of Sulphuric-Acid Delinting and Pre-sowing Electromagnetic Treatment on the Sowing Qualities of Cotton Seeds

Kiril Sirakov (University of Ruse "Angel Kanchev")

VP19 Physicochemical, Microbiological and Sensory Dynamics of Traditional Bulgarian Katak During Extended Storage

Stanko Stankov (University of Food Tehnologies); Tatyana Balabanova (University of Food Tehnologies); Petar Atanasov (University of Food Tehnologies)

VP20 Innovative "Krokmach" Design: Technological Integration of Essential Oil-Matured Beers

Stanko Stankov (University of Food Tehnologies); Petar Atanasov (University of Food Tehnologies); Aleksandar Balabanov (University of Food Tehnologies)

VP21 Antioxidant Enhancement, Physicochemical Characteristics, and Sensory Properties of Craft Beer Fortified with Marjoram, Thyme, and Lavender Essential Oils

Stanko Stankov (University of Food Tehnologies); Petar Atanasov (University of Food Tehnologies); Petar Nedyalkov (University of Food Tehnologies)

VP22 A Counterfactual Model for the Preliminary Sizing of Photovoltaic Systems with Battery Storage

Iliyana Ivanova (Konstantin Preslavsky University of Shumen); Desislava Ivanova (Konstantin Preslavsky University of Shumen)

VP23 A Minimal Key Performance Indicator Framework for Assessing Residential PV–Battery Systems Using Aggregated Monthly Operational Data

Iliyana Ivanova (Konstantin Preslavsky University of Shumen); Desislava Ivanova (Konstantin Preslavsky University of Shumen)

VP24 A Conceptual Model for Assessing the Artificial Intelligence Readiness of Photovoltaic Systems

Desislava Ivanova (Konstantin Preslavsky University of Shumen); Iliyana Ivanova (Konstantin Preslavsky University of Shumen)

VP25 The Role of Coal Gasification in Hydrogen Production for Europe's Energy Transition

Nevena Mileva (Technical University of Varna); Penka Zlateva (Technical university of Varna); Angel Terziev (Technical University of Sofia); Krastin Yordanov (Technical University of Varna); Adriana Comarla (C. Brancusi University of Targu Jiu)

VP26 An Integrated Methodology for Techno-Economic Pre-Feasibility Assessment of Waste Heat Recovery Systems in Industrial Biomass Steam Boilers

Cvetomir Beremski (Technical University of Sofia); Angel Terziev (Technical University of Sofia); Ivan Dimchev (Technical University of Sofia); Penka Zlateva (Technical University of Varna)

VP27 Investigation of the effect of an alginate-based edible coating containing essential oils from Salvia spp. on the quality attributes of walnuts, hazelnuts, and almonds after 60 days of storage

Darina Georgieva (University of Ruse "Angel Kanchev"); Tsvetan Vasilev (Geostroy Engineering Ltd.); Silviya Mollova (Institute of Roses, Essential and Medical Plants)

VP28 Effects of an Alginate-Based Edible Coating Containing Salvia ssp. Essential Oils on the Quality and Storage Stability of Peaches and Apcicots

Darina Georgieva (University of Ruse "Angel Kanchev"); Tsvetan Vasilev (Geostroy Engineering Ltd.); Silviya Mollova (Institute of Roses, Essential and Medical Plants)

VP29 Solution-Cast Polylactic Acid Bio-Composite Films with High Ground Rice Husk Loading

Antoniya Ilieva (Burgas State University "Prof. Dr. Assen Zlatarov”); Dimitrina Kiryakova (Burgas State University "Prof. Dr. Assen Zlatarov”); Radoslava Dimitrova (Burgas State

University "Prof. Dr. Assen Zlatarov"); Sevdalina Turmanova (Burgas State University "Prof. Dr. Assen Zlatarov")

VP30 In Silico Toxicological Profiling and Risk Assessment of Anethole

Yana Koleva (Burgas State University "Prof. Dr Assen Zlatarov"); Nadezhda Mazova (University of Food Technologies Plovdiv); Kristina Mihalkova (Vodni proekti LTD, Plovdiv); Albena Stoyanova (University of Food Technologies Plovdiv); Stanka Damyanova (University of Ruse "Angel Kanchev")

VP31 In silico Assessment and Structural Optimisation of the ADMET Profile of Eugenol using the ADMETlab Platform

Yana Koleva (Burgas State University "Prof. Dr Assen Zlatarov" Burgas); Nadezhda Mazova (University of Food Technologies Plovdiv); Kristina Mihalkova (Vodni proekti LTD, Plovdiv); Albena Stoyanova (University of Food Technologies Plovdiv); Stanka Damyanova (University of Ruse "Angel Kanchev")

VP32 Computational Toxicity Evaluation of Linalool: Insights from Consensus QSAR Models

Yana Koleva (Burgas State University "Prof. Dr Assen Zlatarov" Burgas); Nadezhda Mazova (University of Food Technologies Plovdiv); Kristina Mihalkova (Vodni proekti LTD, Plovdiv); Albena Stoyanova (University of Food Technologies Plovdiv); Stanka Damyanova (University of Ruse "Angel Kanchev")

VP33 In Silico Toxicological Screening and Pharmacokinetic Analysis of the Compound Bilin from Petroleum Using the ProTox-3.0 Platform

Yana Koleva (Burgas State University "Prof. Dr. Assen Zlatarov")

VP34 Comprehensive Multi-Parametric in Silico Safety and Pharmacokinetic Assessment of Bilin from Petroleum

Yana Koleva (Burgas State University "Prof. Dr. Assen Zlatarov"); Viktoria Trifonova (Burgas State University "Prof. Dr. Assen Zlatarov"); Asen Kolev ("LUKOIL Neftochim Burgas"AD); Nazife Ismail (Burgas State University "Prof. Dr. Assen Zlatarov")

VP35 Predictive Evaluation of the Pharmacokinetic and Bioavailability Architecture of Bilin from Petroleum

Yana Koleva (Burgas State University "Prof. Dr. Assen Zlatarov"); Asen Kolev ("LUKOIL Neftochim Burgas" AD); Petya Vasileva (Burgas State University "Prof. Dr. Assen Zlatarov")

VP36 Generalized Drying Curves for Potatoes During Low-Temperature Heat Pump Drying

Stanislava Tasheva (University of Food Technologies)

VP37 Generalized Drying Curves for Apples Obtained via Low-Temperature Heat Pump Drying

Stanislava Tasheva (University of Food Technologies)

VP38 Utilization of Waste Copper Slag as a Secondary Resource Within the Circular Economy

Vasil Pavlov (Varna Free University Chernorizets Hrabar)

VP39 Comparative Performance Analysis of NoSQL (MongoDB) and Relational (MySQL) Databases Using an Automated Benchmarking Framework

Apostol Todorov (Trakia University); Nevenka Ivanova (Trakia University); Galya Shivacheva (Trakia University)

VP40 Study of Fatty Methyl Esters Obtaining by Alkaline Transesterification of Different Vegetable Oils

Vasil Kopchev (University of Ruse “Angel Kanchev”)

VP41 Study of Different Reaction Conditions for Transesterification of Rapeseed Oil

Vasil Kopchev (University of Ruse “Angel Kanchev”)

VP42 Multifactorial Analysis of Possible Conditions for Alkali-Catalyzed Transesterification of Rapeseed Oil with High Free Fatty Acid Content

Vasil Kopchev (University of Ruse “Angel Kanchev”)

VP43 Biological Control of Tuta Absoluta: A Meta-Analysis Comparing Entomopathogenic Fungi and Parasitoids

Gergana Kuncheva (ISSAPP Nikola Poushkarov)

VP44 Entomopathogenic Fungi and Soil Health: Direct and Indirect Interactions and Emerging Data-Driven Approaches

Gergana Kuncheva (ISSAPP Nikola Poushkarov)

VP45 Reshaping ESG in the Italian Energy Sector: The AI-Driven Commo-Tech Business Model of eVISO

Ana Todorova (University of Ruse "Angel Kanchev"); Irina Kostadinova (University of Ruse "Angel Kanchev")

VP46 Governance Models and Technical Challenges in Energy Communities: A Comparative ESG Analysis of Turin and Gabrovo

Ana Todorova (University of Ruse "Angel Kanchev"); Irina Kostadinova (University of Ruse "Angel Kanchev")

VP47 Evaluation of Models for Forecasting Farm Profit

Stanislav Dimitrov (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

VP48 Bioactive Components in Tobacco Seeds: Functional Potential and Application Prospects of an Underutilized By-Product

Violeta Nikolova (Institute of Food Preservation and Quality); Nikolay Nikolov (Institute of Food Preservation and Quality); Zhana Petkova (University of Plovdiv “Paisii Hilendarski”); Todorka Petrova (Institute of Food Preservation and Quality); Ginka Antova (University of Plovdiv “Paisii Hilendarski”); Milena Ruskova (Institute of Food Preservation and Quality)

VP49 Complex Comparative Assessment of the Quality of Oriental Tobaccos of Bulgarian and Greek Origin

Violeta Nikolova (Institute of Food Preservation and Quality); Nikolay Nikolov (Institute of Food Preservation and Quality)

VP50 Break-Even Investment Thresholds for Battery Storage in SME Rooftop PV Systems

Petar Penchev (University of Ruse Angel Kanchev, Ruse, Bulgaria)

VP51 Capital Budgeting for SME Rooftop Photovoltaic Investments

Petar Penchev (University of Ruse Angel Kanchev, Ruse, Bulgaria)

VP52 A Decision Threshold Framework for Electrifying Existing Vehicle Fleets

Petar Penchev (University of Ruse “Angel Kanchev”); Irena Kenarova-Pencheva (University of Ruse “Angel Kanchev”)

VP53 Experimental Monitoring of Particulate Matter Around an Idling Diesel Engine in Indoor Environments

Kalin Dimitrov (Technical University of Sofia); Iliyan Damyanov (Technical University of Sofia); Rosen Miletiev (Technical University of Sofia)

VP54 Directional Change Mapping of Paired Measurement Channels in Dairy Cow Monitoring

Kalin Dimitrov (Technical University of Sofia); Hristo Hristov (Bulgarian Academy of Sciences); Elena Stancheva (Trakia University)

VP55 Influence of Auxiliary Electrical Loading on Spark-Ignition Engine Operation and Tailpipe Emissions During Cold-Start Idling

Hristo Konakchiev (Technical University of Sofia); Iliyan Damyanov (Technical University of Sofia); Durhan Saliev (Technical University of Sofia); Lyubomir Laskov (Technical University of Sofia)

VP56 Road-Load-Based Emission Optimization through ECU Calibration: Ignition Timing

Hristo Konakchiev (Technical University of Sofia); Iliyan Damyanov (Technical University of Sofia)

VP57 Digital prediction of the physicochemical profile of Hyssopus officinalis essential oil using QSPR modeling

Krasimira Dobreva (Trakia University); Yana Koleva (Burgas State University “Prof. Dr. Assen Zlatarov”); Sivelina Delcheva (Trakia University)

VP58 Toxicological Safety Assessment and Toxicokinetic Evaluation of an Essential Oil for Pharmaceutical and Cosmetic Applications

Krasimira Dobreva (Trakia University); Yana Koleva (Burgas State University “Prof. Dr. Assen Zlatarov”); Sivelina Delcheva (Trakia University)

VP59 Applications QSPR modeling of Lipophilicity, Aqueous Solubility, and Skin Permeability of Volatile Components from Hyssop (Hyssopus officinalis L.) Essential oil for the Needs of the Cosmetic Industry

Yana Koleva (Burgas State University “Prof. Dr. Assen Zlatarov”); Sivelina Delcheva (Trakia University); Krasimira Dobreva (Trakia University)

VP60 Artificial Intelligence-Based SCADA Data Processing and Short-Term Wind Farm Active Power Forecasting Using Multi-Output XGBoost

Domnica Alpetri (National University of Science and Technology POLITEHNICA Bucharest); Florentin Helera (Constanta Maritime University); Mihaela Hnatiuc (Constanta Maritime University); Adrian Tulbure (“1 Dec. 1918” University of Alba Iulia)

VP61 A Differentiated Methodology for Teaching Artificial Intelligence and Cybersecurity to Students in Engineering, Technical, and Humanities Specialties

Teodora Hristova (Technical University of Sofia)

VP62 Resilient Time Synchronization for 5G-Advanced and 6G Networks in the GNSS-Contested Era: A Systematic Review

Teodor Iliev (University of Ruse "Angel Kanchev"); Ivelin Penkov (University of Ruse "Angel Kanchev"); Ivaylo Stoyanov (University of Ruse "Angel Kanchev")

VP63 Proposal for Decentralized Self-Learning IoT Mesh of Low-Cost Sensors for Monitoring Urban Environmental Dynamics

Stoitcho Penkov (Technical University of Sofia, branch Plovdiv); Kiril Hristozov (Technical University of Sofia, Branch Plovdiv); Albena Taneva (Technical University of Sofia in Plovdiv, Bulgaria); Teodora Hristova (Technical University of Sofia)

VP64 From Waste to Resource: Effects of Cultivar, Harvest Period, and Extraction Solvent on the Bioactive Potential of Quince (Cydonia oblonga Mill.) Leaves

Dasha Mihaylova (University of Food Technologies)

VP65 Kinetic Study of the Oxidative Degradation of Linseed Oil Supplemented with Sophora japonica L. Extract

Dasha Mihaylova (University of Food Technologies)

VP66 Weather-Based Day-Ahead Solar and Wind Power Generation Forecasting in Romania: A Comparative Analysis Using Machine Learning Models

Teodor-Emilian Petre (National University of Science and Technology POLITEHNICA)

VP67 Gaussian Filtering and Edge Detection Operators in Digital Image Processing Purpose Indication diagram for Ship Diesel Engines

Yulian Moskov (Nikola Vaptsarov Naval Academy); Delyan Hristov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

VP68 Digital Processing and Recognition of Mechanical Indicator Diagrams Using a Modified Canny Algorithm

Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Milen Bonev (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

VP69 Design and Implementation of an Adjustable Voltage Signal Generator for Ventilation Control Systems

Miroslav Andreev (Technical University of Sofia); George Angelov (Technical University of Sofia); Rostislav Rusev (Technical University of Sofia)

Tuesday, 3 November 2026

20:00 **Dinner** (Calista Restaurant)

Wednesday, 4 November 2026

09:00 – 16:30 **Registration** (In front of Calista Grand Hall)

Wednesday, 4 November 2026

09:00 – 10:30 **In-Person Oral Session 1** (Calista Grand Hall)

Session chair: Tsvetelina GEORGIEVA, University of Ruse “Angel Kanchev”

Session co-chair: Somalee MITRA, Indian Institute of Technology, Kharagpur

O1.1 Order Planning Optimization for Composite Film Extrusion Using Slime Mold Optimization Algorithm and an ERP-Based Agent

Borislav Borisov (Konstantin Preslavsky University of Shumen)

O1.2 Design and Implementation of a Java-Based Educational and Assessment Tool for Teaching Encoding in Reed-Solomon Error-Correcting Codes

Daniel Marinov (Sofia Vocational High School of Electronics "John Atanasov"); Dimitar Stoyanov (University of Ruse "Angel Kanchev"); Adriana Borodzhieva (University of Ruse "Angel Kanchev")

O1.3 Increased Generated Power through Modified Starting Temperature in Low Energy Nuclear Reactions

Yordan Paunov (Technical University of Sofia); Dimiter Alexandrov (Lakehead University); Todor Malchev (Technical University of Sofia); Dilyana Gospodinova (Technical University of Sofia); Milena Lazarova (Technical University of Sofia)

O1.4 Secured End User Grid Connection Against Adversarial Attacks

Somalee Mitra (Indian Institute of Technology, Kharagpur); Basab Chakraborty (Indian Institute of Technology, Kharagpur); Lovely Kaur (Indian Institute of Technology, Kharagpur)

O1.5 A Conceptual Model for Knowledge-Based Technologies for Quality 4.0 in Agricultural and Food Production

Tsvetelina Georgieva (University of Ruse “Angel Kanchev”)

O1.6 From Pixels to Mechatronics: A Unified Deep Learning and Regression Approach for Non-Destructive Grading and Automated Sorting of Local Apple Varieties

Tsvetelina Georgieva (University of Ruse “Angel Kanchev”)

Wednesday, 4 November 2026

10:30 – 11:00 **Coffee Break** (In front of Calista Grand Hall)

Wednesday, 4 November 2026

11:00 – 12:15 **In-Person Oral Session 2** (Calista Grand Hall)

Session chair: Krasimira STOILOVA, Institute of Information and Communication Technologies - Bulgarian Academy of Sciences

Session co-chair: Ivanka TSVETKOVA, University of Ruse "Angel Kanchev"

O2.1 Improvement of the Education Process used for Studying the Topic Investigating the Hartley Oscillator

Ivanka Tsvetkova (University of Ruse "Angel Kanchev")

O2.2 Increasing Students Motivation to Learn the Topic Investigation of Butterworth Filter

Ivanka Tsvetkova (University of Ruse "Angel Kanchev")

O2.3 Simulation of Static Eccentricity of the Induction Motor Rotor

Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy); Yordanka Dimitrova (Medical University of Varna)

O2.4 Mathematical Model of Static Eccentricity of the Induction Motor Rotor

Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy); Yordanka Dimitrova (Medical University of Varna)

O2.5 Assessment of Analytical Relationship Between Milling Time and Particle Size in Poweder Metallurgy

Krasimira Stoilova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Todor Stoilov (Institute of information and communication technologies-Bulgarian Academy of Sciences); Silvia Efremova (Institute of information and communication technologies-Bulgarian Academy of Sciences)

Wednesday, 4 November 2026

12:30 – 14:00 **Lunch** (Calista Restaurant)

Wednesday, 4 November 2026

14:00 – 15:15 **Plenary Oral Session 2** (Calista Grand Hall)

Session chair: Irena VALOVA, University of Ruse "Angel Kanchev"

Session co-chair: Nikolay HINOV, Technical University of Sofia

PL2.1 Design and preliminary testing of a Smart Behavioural Barrier System for Fish Protection

Csaba Bartha (ICPE Bistrița); Gabriela Circiumaru (ICPE-CA Bucharest); Attila Tokos (ICPE Bistrita); **Rareș Chihaia (ICPE-CA)**; Stefan-Mihai Petrea ("Dunărea de Jos" University of Galati); Cristian Rimniceanu ("Dunărea de Jos" University of Galati); Andreea El-Leathey (ICPE-CA Bucharest); Iosif Lingvay (ICPE Bistrița)

PL2.2 A Bulgarian Residential Open Data Repository for Urban Building Energy Modelling

Martina Ivanova (GATE Institute, Sofia University "St. Kliment Ohridski"); **Sinda M'Saada (GATE Institute, Sofia University "St. Kliment Ohridski")**; Evgeny Shirinyan (GATE Institute, Sofia University "St. Kliment Ohridski"); Yordan Mitev (GATE Institute, Sofia University "St. Kliment Ohridski"); Dessislava Petrova-Antonova (GATE Institute, Sofia University "St. Kliment Ohridski"); Sinda M'Saada (GATE Institute, Sofia University "St. Kliment Ohridski")

Wednesday, 4 November 2026

15:15 – 15:45 **Coffee Break** (In front of Calista Grand Hall)

Wednesday, 4 November 2026

15:45 – 17:00 **In-Person Poster Session 2** (In front of Calista Grand Hall)

Session chair: Gabriela CIRCIUMARU, ICPE-CA Bucharest

Session co-chair: Boris EVSTATIEV, University of Ruse "Angel Kanchev"

P2.1 Influence of Fertilization and Tillage Systems on the Yield and Growth Rate of Maize, Depending on Different Predecessors

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Iliyana Gerasimova (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Tsetska Simeonova (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Nikolay Traykov (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Maria Ivanova (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov")

P2.2 Comparative Analysis of Transport Service Parameters for the Fertilization Operation According to the Method of Transporting the Mineral Fertilizer to the Field

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Ivan Zahariev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Elena Dimitrova (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Dmitry Domuschi (Odesa State Agrarian University); Svilen Stoyanov (Technical University of Varna); Stanislav Stanchev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov")

P2.3 A Study of the Process of Obtaining Coffee Oil from Recycled Coffee Grounds

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Petr Osadchuk (Odesa National University of Technology); Tetiana Reveniuk (Odesa National University of Technology); Ivan Mortev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov"); Dmitry Domuschi (Odesa State Agrarian University); Krum Stanchev (Institute of Soil Science, Agro-technology and Plant Protection "Nikola Pushkarov")

P2.4 Evaluation of Different Models for Validating the Temperature of Monocrystalline Photovoltaic Modules Under Real Operating Conditions

Ivaylo Lazarov (Technical University of Gabrovo)

P2.5 Switching Frequency versus Voltage Levels in Medium-Voltage PV Inverters: A Comparison of 2L-SPWM and 17L-CHB

Nikolay Hinov (Technical University of Sofia); Plamen Stanchev (Technical University of Sofia); Denitsa Ivanova-Mutafchieva (Technical University of Sofia)

P2.6 A Techno-Economic Comparison of Alkaline, PEM, and Solid-Oxide Electrolyzers for a 20 MW Green-Hydrogen Plant

Nikolay Hinov (Technical University of Sofia); Plamen Stanchev (Technical University of Sofia)

P2.7 Beyond Network Signatures: Comparative Evaluation of Rule-Based, Machine-Learning, and Physics-Informed Intrusion Detection for the Internet of Energy

Nikolay Hinov (Technical University of Sofia); Plamen Stanchev (Technical University of Sofia); Roumen Trifonov (Technical University of Sofia)

P2.8 Refractive-Index Asymmetry and Outer-Surface Antireflection Coatings for HUD Ghost Suppression in Laminated Windshields

Robert Ciobanu (UPB); Maria Mocanu (National University of Science and Technology Politehnica Bucharest); Daniel Comeaga (National University of Science and Technology Politehnica Bucharest); Oana-Maria-Daniela Datcu (National University of Science and Technology Politehnica Bucharest)

P2.9 UAV-Based RGB Vegetation Indices for Crop Vulnerability Mapping in Wheat and Rapeseed

Robert Ciobanu (National University of Science and Technology Politehnica Bucharest); Emilia-Georgiana Prisăcariu (Romanian Research and Development Institute for Gas Turbines COMOTI); Maria-Alexandra Mocanu (National University of Science and Technology Politehnica Bucharest); Cristian Alionte (National University of Science and Technology Politehnica of Bucharest)

P2.10 A Decision Support Framework for Energy-Efficient Manufacturing Based on Industry 5.0 Principles

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P2.11 A Digital Twin Architecture for Energy-Efficient Agro-Industrial Production

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P2.12 Engineering Digital Ecosystems for Sustainable Energy Management

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P2.13 Mask and Age Aware Thermal Neural Networks for Robust Motor Temperature Estimation

Ivan Torlakov (Technical University of Sofia); Kremena Dimitrova (Technical University of Sofia); Yuri Zhelyazkov (Technical University of Sofia)

P2.14 Machine Learning-Based Identification of Bearing Eccentricity Severity in Induction Motors Using Simulation Data

Georgi Enchev (Nikola Vaptsarov Naval Academy); Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Yordanka Dimitrova (Medical University of Varna)

P2.15 Comparative Evaluation of Machine Learning Algorithms for Multi-Level Eccentricity Diagnosis in Induction Motors

Georgi Enchev (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy)

P2.16 How Much Transient Data Is Needed for Reliable Load Event Recognition in Shipboard Power Systems

Georgi Enchev (Nikola Vaptsarov Naval Academy); Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy)

Wednesday, 4 November 2026

15:45 – 17:00 **Virtual Oral Session 3** (online)

Session chair: Gabriel KANEV, University of Ruse “Angel Kanchev”

VO3.1 Dose-Response Thresholds and Surfactant-Induced Efficacy Shifts in Glyphosate-Resistant Goosegrass (Eleusine indica L.) Populations from West Sumatra

Oktizalia Pratiwi (University of Molise); Ardi Ardi (Andalas University); Gustian Gustian (Andalas University); Stefano Marino (University of Molise)

VO3.2 Lightweight Estimation Leaves Area Surface using SAM3 based on Images in Field Bean

Oktizalia Pratiwi (University of Molise); Stefano Marino (University of Molise)

VO3.3 YOLOv11-Based Detection of Glyphosate Response Phenotypes in Eleusine indica

Oktizalia Pratiwi (University of Molise); Stefano Marino (University of Molise)

VO3.4 Performance Evaluation of Ultra Wide Band Radar in Detecting Metal Objects within Dry Bulk Food

Boris Borisov (University of Ruse "Angel Kanchev"); Georgi Krastev (University of Ruse "Angel Kanchev")

VO3.5 Thermodynamic Analysis of a Geothermal Integrated ORC–Absorption Cooling System Using Two Working Fluids

Sina Hassanlue (Amirkabir University of Technology); Arshia Seyed Alikhani (University of Tehran); Katerina Gabrovska-Evstatieva (University of Ruse "Angel Kanchev"); Mohammad Alhuyi Nazari (University of Tehran); Boris Evstatiev (University of Ruse "Angel Kanchev")

Wednesday, 4 November 2026

17:00 – 18:15 **In-Person Poster Session 3** (In front of Calista Grand Hall)

Session chair: Adriana BORODZHIEVA, University of Ruse “Angel Kanchev”

Session co-chair: Nadezhda EVSTATIEVA, University of Ruse “Angel Kanchev”

P3.1 Experimental Research of Technologies and Technical Means for Forming a High Arc Shaped Surface Beds

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Ivan Mortev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Spiridon Stoev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Krum Stanchev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Elena Dimitrova (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Kiril Stefanov (University of Forestry)

P3.2 Theoretical Determination of the Diameter and Width of the Pressing Roller of Granulating Machines Operating by the Pressing Method

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Krum Stanchev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Ivan Mortev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Dmitry Domuschi (Odesa State Agrarian University); Ivan Zahariev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Tihomir Krumov (University of Forestry)

P3.3 Research into the Process of Thermal Decomposition of Biomass with a Pilot Laboratory Setup

Yuriy Enakiev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Krum Stanchev (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Elena Dimitrova (Institute of Soil Science, Agro-technology and Plant Protection “Nikola Pushkarov"); Dmitry Domuschi (Odesa State Agrarian University); Svilen Stoyanov (Technical University of Varna); Kiril Stefanov (University of Forestry)

P3.4 Engineering Intelligent Innovation Management Systems for Industry 5.0

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P3.5 From Quality Management to Intelligent Innovation Ecosystems: An Integrated Framework for Industry 5.0

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P3.6 An Intelligent Innovation Management Framework for Industrial Organizations in the Era of Industry 5.0

Tsanka Zlateva-Petkova (Technical University of Gabrovo)

P3.7 Risk-Aware Inventory Optimization for Sustainable Livestock Supply Management under Stochastic Demand

Elisaveta Trichkova-Kashamova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Kamelia Ivanova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Elena Paunova-Hubenova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

P3.8 AetherPi Nexus Lab: A Technical Overview of a Compact Heterogeneous Edge AI Platform

Zdravko Kuzmanov (Konstantin Preslavsky University of Shumen); Donika Dimanova (Konstantin Preslavsky University of Shumen)

P3.9 A Kubernetes-Orchestrated HackRF One Platform for 2.4 GHz Spectrum Visualization and Load-Balanced Edge Service Validation

Zdravko Kuzmanov (Konstantin Preslavsky University of Shumen); Donika Dimanova (Konstantin Preslavsky University of Shumen)

P3.10 Experimental Performance Assessment of GPON and 5G for Access to Proxmox-Based Virtual Laboratories

Evgeniya Vasileva-Ilieva (Technical University of Sofia, Faculty of Engineering and Pedagogy of Sliven)

P3.11 Simplified Life-Cycle GWP Assessment of New Single-Family Houses in Bulgaria Using EPC Data and the Level(s) Framework

Ivan Dimchev (Technical University of Sofia); Angel Terziev (Technical University of Sofia)

P3.12 Reduced-Order Integral Modeling of Non-Isothermal Swirling Air Jets for High-Rise Industrial Spaces

Stoil Ivanov (Technical University of Sofia); Ivan Dimchev (Technical University of Sofia); Nevena Mileva (Technical University of Varna)

P3.13 Analysis of Cars Low Beam Light Patterns

Georgi Kadikyanov (University of Ruse "Angel Kanchev"); Daniel Lyubenov (University of Ruse "Angel Kanchev"); Rosen Ivanov (University of Ruse "Angel Kanchev"); Zhivko Kolev (University of Ruse "Angel Kanchev"); Gergana Staneva (University of Ruse "Angel Kanchev"); Iliyana Minkovska (University of Ruse "Angel Kanchev")

P3.14 Digital Twin-Based Monitoring and Adaptive Power Allocation in EV Charging Infrastructure

Plamen Stanchev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia); Roumen Trifonov (Technical University of Sofia)

P3.15 Environmental Assessment of LED and HPS Street Lighting

Plamen Stanchev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia); Denitsa Ivanova-Mutafchieva (Technical University of Sofia)

P3.16 A Multi-Criteria Framework for Mapping Urban Night-Time Light Pressure

Plamen Stanchev (Technical University of Sofia); Nikolay Hinov (Technical University of Sofia)

Wednesday, 4 November 2026

17:00 – 18:15 **Virtual Oral Session 4** (online)

Session chair: Irena VALOVA, University of Ruse "Angel Kanchev"

VO4.1 Integration of a Thermal Engineering Object in an Immersive Environment

Vasil Hristov (Trakia University - Stara Zagora); Nely Georgieva (Trakia University - Stara Zagora); Petko Tsankov (Trakia University - Stara Zagora); Victor Häfner (Karlsruher Institut für Technologie)

VO4.2 Experimental Comparison of Surface Temperature and Energy Performance Between a Liquid-Cooled Photovoltaic–Thermal Panel and a Conventional Photovoltaic Panel

Roxana Grigore (Vasile Alecsandri University of Bacau); Ioan Viorel Banu (Vasile Alecsandri University of Bacau); Sorin Gabriel Vernica (Vasile Alecsandri University of Bacau); Sorin Eugen Popa (Vasile Alecsandri University of Bacau); Madalina Ioana Barbu (Vasile Alecsandri University of Bacau)

VO4.3 Enhancing Industrial Microgrid Flexibility Through Virtual Power Plant Architectures within the MATLAB/Simulink Environment

Ioan Viorel Banu (Vasile Alecsandri University of Bacau); Fadila Barkat (University of Ghardaia); Josep M. Guerrero (Univ. of Valladolid, Spain Zhejiang University, Zhuji, China); Roxana Grigore (Vasile Alecsandri University of Bacau); Petru-Gabriel Puiu (Vasile Alecsandri University of Bacau); Dragos-Alexandru Andrioaia (Vasile Alecsandri University of Bacau)

VO4.4 Bi-Criterial Economic–Energy Optimization of Automated Lumber-Cutting Plans Using NSGA-II, AHP and TOPSIS: A Digital-Twin Case Study

Roxana Grigore (Vasile Alecsandri University of Bacau); Sorin Eugen Popa (Vasile Alecsandri University of Bacau); Dragos Andrioaia (Vasile Alecsandri University of Bacau); Andrei Enachi (Vasile Alecsandri University of Bacau); Ioan Viorel Banu (Vasile Alecsandri University of Bacau)

VO4.5 Influence of Structural Thermal Mass on the Heating and Cooling Energy Needs of Passive Buildings in Different Climate Zones of Bulgaria

Pencho Zlatev (University of Ruse "Angel Kanchev"); Vencislav Dimitrov (University of Ruse "Angel Kanchev"); Gencho Popov (University of Ruse "Angel Kanchev")

VO4.6 Secure and Privacy-Preserving Cloud Architectures: Integrating GDPR, AI Governance, and Data Protection

Kalina Nikiforova-Ilieva (University of Ruse "Angel Kanchev"); Tsvetozar Georgiev (University of Ruse "Angel Kanchev")

Wednesday, 4 November 2026

20:00 **Dinner** (Calista Restaurant)

Thursday, 5 November 2026

09:00 – 17:15 **Registration** (In front of Calista Grand Hall)

Thursday, 5 November 2026

09:00 – 10:15 **In-Person Oral Session 3** (Calista Grand Hall)

Session chair: Todor STOILOV, Institute of Information and Communication Technologies - Bulgarian Academy of Sciences

Session co-chair: Victor CONSTANTIN, National University of Science and Technology POLITEHNICA Bucharest

O3.1 Testing Stand for General-Purpose Hydraulic Pumps

Ionela - Mihaela Popescu (National University of Science and Technology POLITEHNICA Bucharest); Victor Constantin (National University of Science and Technology POLITEHNICA Bucharest); Daniel Nancă (National University of Science and Technology POLITEHNICA Bucharest); George-Laurențiu Boroghină (National University of Science and Technology POLITEHNICA Bucharest); Miruna Comeagă (National University of Science and Technology POLITEHNICA Bucharest); Grigore-Octavian Donțu (National University of Science and Technology POLITEHNICA Bucharest)

O3.2 Reversible Subtraction with Toffoli Gates: Educational Design of Half- and Full One-Bit Subtractors in Logisim

Adriana Borodzhieva (University of Ruse “Angel Kanchev”)

O3.3 Some considerations regarding metrological aspects applied in microelectronics and micromechanics

George-Laurentiu Boroghina (POLITEHNICA Bucharest); Edgar Moraru (POLITEHNICA Bucharest); Adrian Gabriel Chiriac (POLITEHNICA Bucharest); Vlad Stanescu (POLITEHNICA Bucharest); Teodor Coporan (POLITEHNICA Bucharest); Ionela Mihaela Popescu (POLITEHNICA Bucharest); Adrian - Laurentiu Cartal (POLITEHNICA Bucharest); Ionut Cosmin Nica (POLITEHNICA Bucharest); Daniel Constantin Comeaga (POLITEHNICA Bucharest)

O3.4 High Precision Actuation Systems for Torque Testing Stand

Victor Constantin (National University of Science and Technology POLITEHNICA Bucharest); Daniel Nancă (National University of Science and Technology POLITEHNICA Bucharest); Alexandra-Gabriela Voicu (National University of Science and Technology POLITEHNICA Bucharest); Ionela - Mihaela Popescu (National University of Science and Technology POLITEHNICA Bucharest); Ionut-Cosmin Nica (National University of Science and Technology POLITEHNICA Bucharest); Miruna Comeagă (National University of Science and Technology POLITEHNICA Bucharest)

O3.5 Conceptual Architecture of an Interactive Educational System for Reed-Solomon Coding and Decoding

Daniel Marinov (Sofia Vocational High School of Electronics “John Atanasoff”); Dimitar Stoyanov (University of Ruse "Angel Kanchev"); Adriana Borodzhieva (University of Ruse "Angel Kanchev")

Thursday, 5 November 2026

10:15 – 10:30 **Coffee Break** (In front of Calista Grand Hall)

Thursday, 5 November 2026

10:30 – 11:15 **Industrial Session** (Calista Grand Hall)

Session chair: Nicolay MIHAILOV, University of Ruse "Angel Kanchev"

I.1 Pioneering Sustainable Polymer Solutions for Modern Industries

Teodora Zhelyazkova (Ate Plast LTD.)

I.2 Enery and the Next Generation: Where Experience Meets Creativity

Deniz Stoycheva (Enery Bulgaria)

I.3 Industrial Solutions for Generation and Storage of Electricity from Huawei and SKE Engineering

Lyudmil Tsvetkov (SKE Engineering GmbH) and Marin Marinov (SKE Engineering GmbH)

Thursday, 5 November 2026

11:15 – 12:30 **In-Person Oral Session 4** (Calista Grand Hall)

Session chair: Tsvetana GRIGOROVA, Technical University of Sofia, Branch Plovdiv

Session co-chair: Adriana BORODZHIEVA, University of Ruse "Angel Kanchev"

O4.1 Unified Packet Capture to Sequence Methodology for Cybersecurity Analysis in Industrial Internet of Things and Smart Grid Communication Networks

Ivan Torlakov (Technical University of Sofia); Yuri Zhelyazkov (Technical University of Sofia)

O4.2 Artificial Intelligence Platforms for Parking Revenue Optimization: A Comparative Analysis of AI-Driven Parking Management Systems

Bojidar Bratoev (University of Ruse "Angel Kanchev"); Svetlana Stefanova (University of Ruse "Angel Kanchev")

O4.3 A TSG-Driven Framework for Reversible Multiplexer Design and Three-Input Boolean Function Realization

Adriana Borodzhieva (University of Ruse "Angel Kanchev")

O4.4 Reversible Construction of a Full 3×8 Decoder Using Peres Gates: A Complete Workflow for Boolean Function Synthesis

Adriana Borodzhieva (University of Ruse "Angel Kanchev")

O4.5 Power Distribution between Milling and Compaction in Powder Metallurgy

Todor Stoilov (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

Thursday, 5 November 2026

11:15 – 12:30 **In-Person Oral Session 5** (Calista Meeting Room)

Session chair: Tzvetelin GUEORGUIEV, Technical University of Gabrovo

Session co-chair: Dimitar TSVETANOV, Nikola Vaptsarov Naval Academy

O5.1 Diagnosis of Static Eccentricity of the Induction Motor Rotor

Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Georgi Enchev (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy); Yordanka Dimitrova (Medical University of Varna)

O5.2 The Effect of Implicit Knowledge on Robustness to Geometric Domain Shift

Alexandru Hrabac (National University of Science and Technology Politehnica Bucharest); Robert Ciobanu (National University of Science and Technology Politehnica Bucharest); Daniel Comeaga (National University of Science and Technology Politehnica Bucharest); Gabriel Sacuiu (National University of Science and Technology Politehnica Bucharest); Onur Vuap (National University of Science and Technology Politehnica Bucharest); Corneliu Florea (National University of Science and Technology Politehnica Bucharest)

O5.3 Effects of AI on auditing quality management systems

Tzvetelin Gueorguiev (Technical University of Gabrovo)

O5.4 Analysis of IATF 16949 Nonconformities and Certification Dynamics

Tzvetelin Gueorguiev (Technical University of Gabrovo)

O5.5 An Innovative Approach to Integrating Environmental Management Systems and UN Sustainable Development Goals

Tzvetelin Gueorguiev (Technical University of Gabrovo); Daniela Toneva (Technical University of Varna)

Thursday, 5 November 2026

12:30 – 14:00 **Lunch** (Calista Restaurant)

Thursday, 5 November 2026

14:00 – 14:45 **Project Dissemination** (Calista Grand Hall)

Session chair: Boris EVSTATIEV, University of Ruse “Angel Kanchev”

PD1.1 Presentation of the project Artificial Intelligence for Green Understanding, Insights & Decision Empowerment (AIGUIDE)

Tsvetelina KANEVA (University of Ruse “Angel Kanchev”)

Thursday, 5 November 2026

14:45 – 15:15 **Coffee Break** (In front of Calista Grand Hall)

15:15 – 16:30 **In-Person Poster Session 4** (In front of Calista Grand Hall)

Session chair: Todor STOILOV, Institute of Information and Communication Technologies - Bulgarian Academy of Sciences

Session co-chair: Nikolay HINOV, Technical University of Sofia

P4.1 Roughness analysis in turning C45 and 41Cr4 steel by applying statistical analysis methods

Hristo Radev (Technical University of Gabrovo); Hristo Yakimov (Technical University of Gabrovo); Hasan Hasanov (Technical University of Gabrovo); Irina Aleksandrova (Technical University of Gabrovo)

P4.2 Application of mathematical statistics for accuracy analysis in turning C45 and 41Cr4 steels

Hristo Yakimov (Technical University of Gabrovo); Hristo Radev (Technical University of Gabrovo); Hasan Hasanov (Technical University of Gabrovo); Irina Aleksandrova (Technical University of Gabrovo)

P4.3 Experimental Investigation of Engine Oil Degradation Based on Viscosity and Density Measurements

Atanasi Tashev (Technical university of Sofia, Branch Plovdiv)

P4.4 Environmental Effects of Ethanol–Gasoline Blends in Spark Ignition Engines: A Critical Review

Atanasi Tashev (Technical university of Sofia, Branch Plovdiv)

P4.5 Engineering Analysis and Operational Assessment of Three-phase Inverters Implemented with Si IGBT and Full SiC Power Semiconductor Modules for a Mining Locomotive

Evgeniya Vasileva-Ilieva (Technical University of Sofia, Faculty of engineering and pedagogy of Sliven); Kostadin Milanov (Technical University of Sofia); Mehmet Sen (Uludağ Üniversitesi)

P4.6 Commutation Duty Loss Analysis of the Forward SEPIC Operating Mode in a Bidirectional Soft-Switching SEPIC/ZETA Converter

Mihail Dobrolitsky (Technical University of Sofia, Plovdiv Branch); Tsvetana Grigorova (Technical University of Sofia, Plovdiv Branch); Nikolay Hinov (Technical University of Sofia Sofia)

P4.7 Non-Minimum-Phase Dynamics of the Forward SEPIC Operating Mode in a Bidirectional Soft-Switching SEPIC/ZETA Converter

Tsvetana Grigorova (Technical University of Sofia, Plovdiv Branch); Mihail Dobrolitsky (Technical University of Sofia, Plovdiv Branch); Nikolay Hinov (Technical University of Sofia)

P4.8 Comparison of physicochemical properties of gasoline with blends of methanol, ethanol, isopropanol and n-butanol

Simeon Iliev (University of Ruse "Angel Kanchev"); Elitsa Nakova (University of Ruse "Angel Kanchev")

P4.9 Investigation of the causes of deviations in the hydraulic characteristics of piezo injectors

Simeon Iliev (University of Ruse "Angel Kanchev")

P4.10 Comparison of some physical properties of gasoline with blends of methanol, ethanol, isopropanol and n-butanol

Simeon Iliev (University of Ruse "Angel Kanchev"); Elitsa Nakova (University of Ruse "Angel Kanchev")

P4.11 Conceptual Model of an Electronic System for Controlling the Energy Flows in a PV-Powered Greenhouse with an Underground Thermal Storage

Boris Evstatiev (University of Ruse "Angel Kanchev"); Nadezhda Evstatieva (University of Ruse "Angel Kanchev")

P4.12 Performance Analysis of a PV-Powered Greenhouse with Thermal Storage under Different Design and Exploitation Parameters

Nadezhda Evstatieva (University of Ruse "Angel Kanchev"); Boris Evstatiev (University of Ruse "Angel Kanchev")

P4.13 Optimization of a Bagging Classifier for Identification of Active, Inductive and Capacitive Load Switching in a Ship Power Plant

Georgi Enchev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

P4.14 Tree-Ensemble Optimization for Multi-Class Recognition of Combined Load Switching Events in a Ship Power Plant

Georgi Enchev (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

P4.15 Benchmarking Ensemble, Kernel and Instance-Based Learning for Ship Power Plant Transient Recognition

Georgi Enchev (Nikola Vaptsarov Naval Academy); Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy)

P4.16 The Influence of Contact Resistance of Low-Voltage Switching Devices on the Three-Phase Short-Circuit Current

Stanimir Valtchev (FCT/UNL); Almaz Petrov (Kazan State Power University); Elena Gracheva (Kazan State Power University); Tatyana Sinyukova (Lipetsk State Technical University); Bruno Luis (FCT/UNL); Iva Draganova-Zlateva (Technical University of Sofia)

P4.17 Study of the Control System of a Longitudinal Boring Machine

Stanimir Valtchev (FCT/UNL); Tatyana Sinyukova (Lipetsk State Technical University); Alexey Sinyukov (Lipetsk State Technical University); Elena Gracheva (Kazan State Power Engineering University); Jose Goncalves (University of Namibe); Dilyana Gospodinova (Technical University of Sofia)

Thursday, 5 November 2026

15:15 – 16:30 **Virtual Oral Session 5** (online)

Session chair: Seher KADIROVA, University of Ruse “Angel Kanchev”

VO5.1 Afforestation as a Complementary Carbon Removal Strategy for Bulgaria's Power-Sector Decarbonisation

Georgi Chankov (University of National and World Economy); Nikolay Hinov (Technical University of Sofia)

VO5.2 Residential Electricity Savings from Solar Thermal Domestic Hot Water Systems in Bulgaria: A Scenario Assessment

Georgi Chankov (University of National and World Economy)

VO5.3 Learning Management Systems - A Review of Features, Technologies and Educational Impact

Nikolina Todorova (University of Ruse "Angel Kanchev"); Irena Valova (University of Ruse "Angel Kanchev"); Tsvetelina Kaneva (University of Ruse "Angel Kanchev")

VO5.4 Learning Management Systems with Artificial Intelligence – a Multi-Layer Architecture Model

Nikolina Todorova (University of Ruse "Angel Kanchev"); Irena Valova (University of Ruse "Angel Kanchev"); Tsvetelina Kaneva (University of Ruse "Angel Kanchev")

VO5.5 Identification of Water Stress in Cherry Seedlings: Combination of Hyperspectral and Color Features Using 1DCNN-SE-Residual Attention-CBAM

Yanying An (La Trobe University)

VO5.6 Fuzzy Logic-Based Power System Stabilizer for Enhanced Dynamic Stability in a Multi-Machine Power System

Seher Kadirova (University of Ruse "Angel Kanchev"); Riaz Kurbanali Israni (RK University); Tsvetelina Stefanova (University of Ruse "Angel Kanchev"); Amit Lathigara (RK University); Tsvetelina Georgieva (University of Ruse "Angel Kanchev"); Tsvetozar Georgiev (University of Ruse "Angel Kanchev")

Thursday, 5 November 2026

16:30 – 17:45 **In-Person Poster Session 5** (In front of Calista Grand Hall)

Session chair: Donika DIMANOVA, Konstantin Preslavsky University of Shumen

Session co-chair: Ivanka TSVETKOVA, University of Ruse “Angel Kanchev“

P5.1 Investigation of the Natural Frequencies of a Mi-8 Helicopter Tail Transmission Shaft

Angelina Goreva (Technical University of Sofia, Plovdiv Branch); Stanimir Penchev (Technical University of Sofia, Plovdiv Branch)

P5.2 Risk-Aware Multi-Objective Optimization of Photovoltaic Systems for Sustainable Environmental Management

Desislava Kioseva (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences); Elisaveta Trichkova-Kashamova (Institute of Information and Communication Technologies - Bulgarian Academy of Sciences)

P5.3 Simulation Modeling of the Pressure Plate of a Single-Disc Clutch for a Passenger Car

Stiliyana Taneva (Technical University of Sofia, Plovdiv Branch); Krasimir Ambarev (Technical University of Sofia, Plovdiv Branch)

P5.4 A Probabilistic Framework for Assessing Rapidly Varying Loads in Industrial and Healthcare Power Systems

Yordanka Dimitrova (Medical University - Varna); Mediha Mehmed-Hamza Mehmed-Hamza (Medical University - Varna); Rosen Vasilev (Medical University - Varna)

P5.5 Determination of the Parameters of Unbalanced and Non-Sinusoidal Electrical Loads Using Statistical Modelling

Yordanka Dimitrova (Medical University - Varna); Mediha Mehmed-Hamza (Medical University - Varna); Rosen Vasilev Vasilev (Medical University - Varna)

P5.6 Integrated Methodology for Multicriteria Assessment of Photovoltaic Generation and Battery Storage in Hospital Power-Supply Systems

Yordanka Dimitrova (Medical University - Varna); Mediha Mehmed-Hamza (Medical University - Varna); Rosen Vasilev (Medical University - Varna)

P5.7 Investigating of using ML for transient process identification in the ship's power plant

Georgi Enchev (Nikola Vaptsarov Naval Academy)

P5.8 Learning time optimisation of ML classifiers for processes in ship power plant

Georgi Enchev (Nikola Vaptsarov Naval Academy); Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy)

P5.9 Optimization of ML classifiers for identification of transient processes in a ship power plant

Georgi Enchev (Nikola Vaptsarov Naval Academy); Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

P5.10 3D Model of Soil Aeration Machine

Georgi Komitov (Technical University of Sofia, branch Plovdiv); Kiril Lengerov (Technical University of Sofia, branch Plovdiv); Evgeni Kehayov (”Paisii Hilendarski”- University of Plovdivon); Ivan Mitkov (Agricultural University – Plovdiv)

P5.11 Study of the Change in the Average Roughness Value of Factorial Application of a Textured Laser Coating on 316L Steel

Georgi Komitov (Technical University of Sofia, Branch Plovdiv); Ivan Ivanov (Technical University of Sofia); Karlis Pigoznis (Riga Technical University); Veselin Mengov (University of Plovdiv “Paisii Hilendarski”); Vladimir Kotev (University of National and World Economy)

P5.12 Interactive Method for Semi-Automatic Tracking of Plant Morphological Architecture in Laboratory-Grown Crops Using Computer Vision

Georgi Komitov (Technical University of Sofia, branch Plovdiv); Veselin Mengov (University of Plovdiv “Paisii Hilendarski”); Kiril Lengerov (Technical University of Sofia, branch Plovdiv); Nikolay Vakrilov (University of Plovdiv “Paisii Hilendarski”)

P5.13 Information Streams and Approaches for Building WEB Based Platforms Aiding High School Graduates in Choosing a University Degree Course

Ivan Evstatiev (University of Ruse "Angel Kanchev"); Georgi Georgiev (University of Ruse "Angel Kanchev")

P5.14 Voltage-Only RMS-Wavelet Detection of Load-Induced Events in an Isolated Generator-Fed AC System

Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Hristo Milushev (Nikola Vaptsarov Naval Academy)

P5.15 Supraharmonic Voltage Aggregation and Passive-Filter Trade-Off in a Synchronous-Generator-Fed Shipboard-Type System with Parallel Converter Loads

Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Georgi Enchev (Nikola Vaptsarov Naval Academy)

P5.16 A Causal Multi-Criteria Underfrequency and RoCoF Relay for Isolated Power Systems: Implementation and FPGA-in-the-Loop Validation

Dimitar Tsvetanov (Nikola Vaptsarov Naval Academy); Nikolay Djagarov (Nikola Vaptsarov Naval Academy); Zhivko Grozdev (Nikola Vaptsarov Naval Academy)

Thursday, 5 November 2026

16:30 – 17:45 **Virtual Oral Session 6** (online)

Session chair: Tsvetelina KANEVA, University of Ruse "Angel Kanchev"

VO6.1 Application of AI in Provision of Public Administrative Services: A Conceptual Analysis

Tsvetanka Dutsova (University of Ruse "Angel Kanchev"); Rumen Rusev (University of Ruse “Angel Kanchev”); Daniela Yordanova (University of Ruse “Angel Kanchev”)

VO6.2 A CNN-LSTM Model for Fault Diagnosis Using Acoustic, Vibration, and Electrical Signals

Deyan Dimitrov (University of Ruse "Angel Kanchev"); Tsvetelina Kaneva (University of Ruse "Angel Kanchev"); Irena Valova (University of Ruse "Angel Kanchev"); Boris Evstatiev (University of Ruse "Angel Kanchev")

VO6.3 A Generative Digital Twin for Synthetic Multimodal Sensor Data Generation in Machine Fault Diagnosis

Deyan Dimitrov (University of Ruse "Angel Kanchev"); Tsvetelina Kaneva (University of Ruse "Angel Kanchev"); Irena Valova (University of Ruse "Angel Kanchev"); Boris Evstatiev (University of Ruse "Angel Kanchev")

VO6.4 Computational Analysis of Aerodynamic Performance of a 45◦ Archimedean Spiral Wind Turbine

Kothapalli Lalitha Vishnu Kamesh (Amrita School of Engineering); Piyush Pratap Singh (Amrita School of Engineering)

VO6.5 Power Reduction versus Speed Loss under Shaft Power Limitation for EEXI Compliance of a 35,000 DWT Bulk Carrier

Levent Ali (Romanian Naval Academy ”Mircea cel Bătrân”); Dinu Atodiresei (Romanian Naval Academy ”Mircea cel Bătrân”); Catalin Popa (Romanian Naval Academy ”Mircea cel Bătrân”); Sergiu Lupu (Romanian Naval Academy ”Mircea cel Bătrân”); Nistor Filip (Romanian Naval Academy ”Mircea cel Bătrân”)

VO6.6 Impact of the Channel Material on an Ultrasensitive Gas Nano Sensor Based on the JVTFET Device

Abdelaziz Lazzaz (Université d'Oran 1 Ahmed Ben Bella); Fatiha Beladam (Science Condensed Matter Laboratory); Khaled Bousbahi (Science Condensed Matter Laboratory); Mostefa Ghamnia (Science Condensed Matter Laboratory, Oran 1 university)

Thursday, 5 November 2026

20:00 **Gala Dinner** (Calista Grand Hall)

Friday, 6 November 2026

09:00 – 10:15 **Virtual Oral Session 7 (online)**

Session chair: Boris EVSTATIEV, University of Ruse "Angel Kanchev"

VO7.1 Multi-Temporal Sentinel-2 NDVI–NDWI–NDMI Differencing for Field-Scale Moisture–Vegetation Coupling in Agriculture

Christopher Harris (University of Northern Colorado)

VO7.2 Risk-Aware Soft Actor-Critic for Reliable Energy-Water Control in Solar-Powered Smart Irrigation Microgrids

Christopher Harris (University of Northern Colorado)

VO7.3 When Sensors Fail: Fault-Aware Gradient-Boosting for Soil-Moisture Forecasting in Smart Irrigation

Christopher Harris (University of Northern Colorado)

VO7.4 What Drives Organic Food Consumption in India? Evidence from Logit and Probit Models

Suraj Kumar (Rajendra Mishra School of Engineering Entrepreneurship, Indian Institute of Technology Kharagpur); Debasruti Bhattacharya (Indian Institute of Technology Kharagpur Kharagpur); Mamoni Banerjee (Rajendra Mishra School of Engineering Entrepreneurship, Indian Institute of Technology Kharagpur Kharagpur)

VO7.5 XSunGrowthNet: An Explainable Two-Phase Deep Learning Ensemble Framework for Sunflower Growth Stage Classification

Anju Sangwan (Central University of Haryana); Suraj Arya (Central University of Haryana)

VO7.6 Implementation and Performance Evaluation of a Cyber-Physical System-Based Intelligent Smart Energy Management System with Predictive Analytics to Enhance University Energy Utilization

Jennifer Juaneza (Carlos Hilado Memorial State University); Felicísimo Wenceslao Jr. (Northern Iloilo State University); Patrick Cerna (State University of Northern Negros)

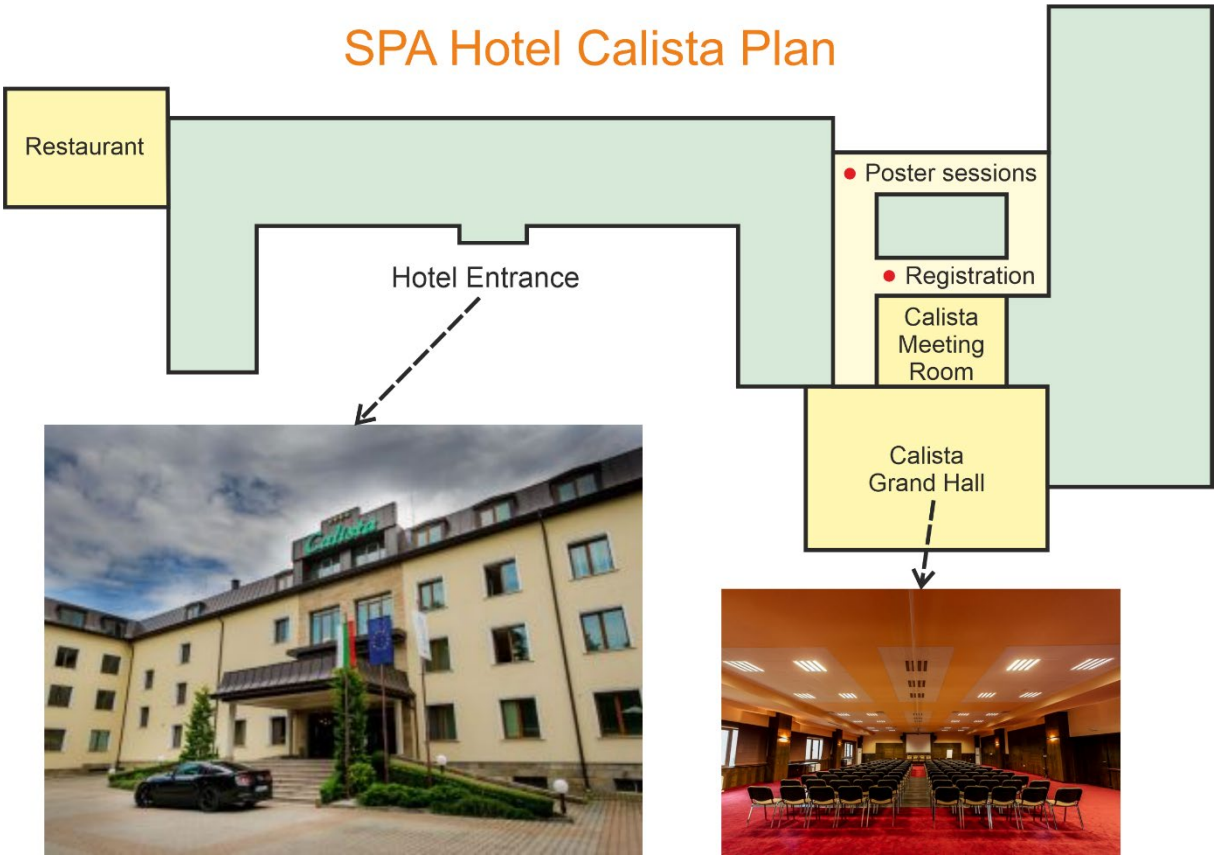
Friday, 6 November 2026

10:15 End of Conference

VENUE

The 2026 11th International Conference on Energy Efficiency and Agricultural Engineering (EE&AE 2026) will take place in the SPA Hotel Calista, 6062 Starozagorski Bani, Bulgaria.

For further directions use the GPS coordinates: 42.4529491666277, 25.497837065474272



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24
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